

=> d his

(FILE 'HOME' ENTERED AT 11:35:59 ON 14 JUL 2006)

FILE 'REGISTRY' ENTERED AT 11:36:09 ON 14 JUL 2006

L1 STRUCTURE UPLOADED

L2 STRUCTURE UPLOADED

L3 0 S L1 OR L2

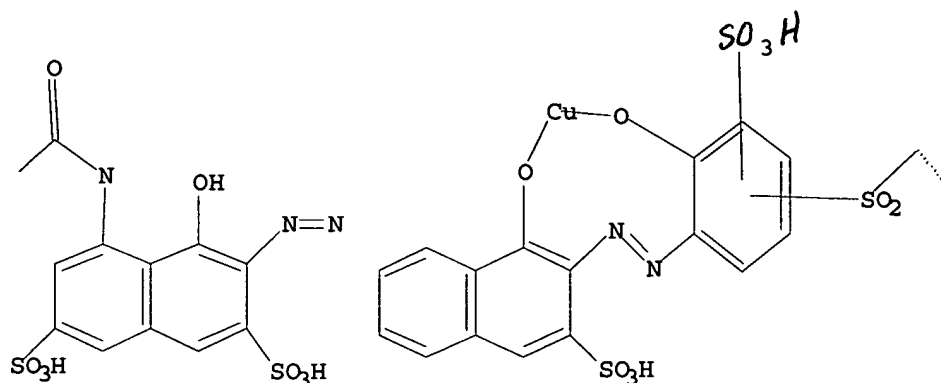
L4 3 S L3 FULL

FILE 'CAPLUS' ENTERED AT 11:37:19 ON 14 JUL 2006

L5 1 S L4

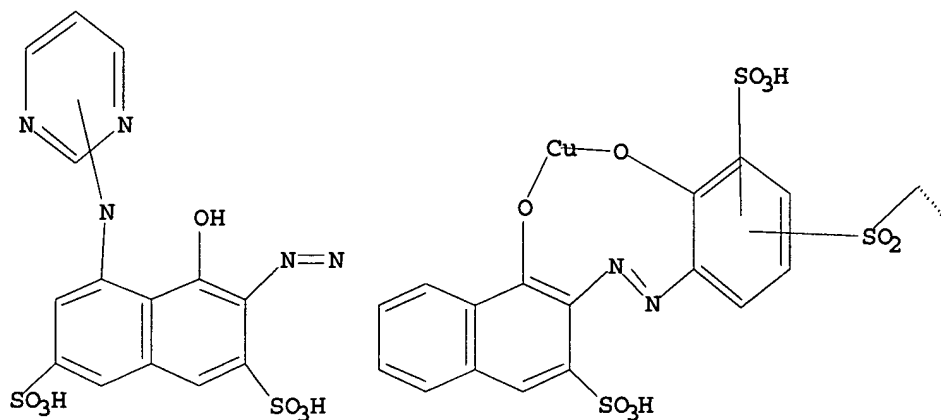
=> d que 15 stat

L1 STR



Structure attributes must be viewed using STN Express query preparation.

L2 STR



Structure attributes must be viewed using STN Express query preparation.

L4 3 SEA FILE=REGISTRY SSS FUL L1 OR L2

L5 1 SEA FILE=CAPLUS ABB=ON PLU=ON L4

=> d bib abs hitstr

APPLICANT

Chemical structure of a copper complex of two azobenzene derivatives. The left ligand is a 2-hydroxy-4-methanesulfonyl-6-(NR<sub>1</sub>R<sub>2</sub>)phenyl group. The right ligand is a 2,6-bis(methanesulfonyl)-4-((v-methanesulfonyl)phenyl)azobenzene group. The two ligands are coordinated to a central copper atom (Cu) via their phenolic oxygen atoms.

I

AB The invention relates to azo dye copper complexes (I; M = H, alkali metal, ammonium, alkaline earth metal/2; R1 = H, C1-4-alkyl; R2 = fiber-reactive group; Z = vinyl or potential vinyl; v = 0,1) and their manufacture and use for coloring or printing fibrous materials. I have show fast blue shades. In an example, 4-(2-sulfatoethylsulfonyl)-2-amino-6-phenolsulfonic acid-2-amino-5-hydroxy-7-naphthalenesulfonic acid was prepared, diazotized, and coupled with 1-acetamido-3,6-disulfo-8-naphthol. The resulting disazo dye was treated with copper sulfate pentahydrate to give

a deep blue dye ( $\lambda_{\text{max}}$  587 nm) for cotton.

IT 634897-94-2P

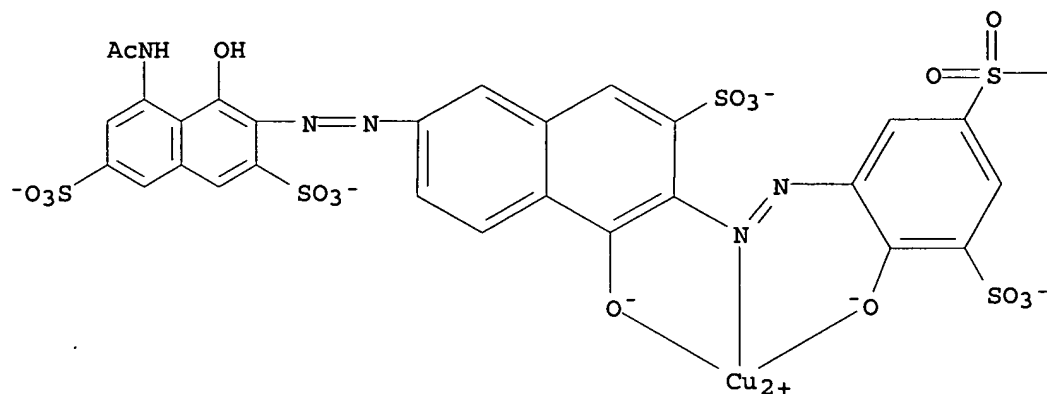
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(blue dye; production of water-soluble reactive disazo dyes and their use)

RN 634897-94-2 CAPLUS

CN Cuprate(5-), [5-(acetylamino)-4-hydroxy-3-[[5-(hydroxy- $\kappa$ O)-6-[[2-(hydroxy- $\kappa$ O)-3-sulfo-5-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo- $\kappa$ N1]-7-sulfo-2-naphthalenyl]azo]-2,7-naphthalenedisulfonato(7-)]-, pentahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



● 5 H<sup>+</sup>

PAGE 1-B

—CH<sub>2</sub>—CH<sub>2</sub>—O—SO<sub>3</sub><sup>-</sup>

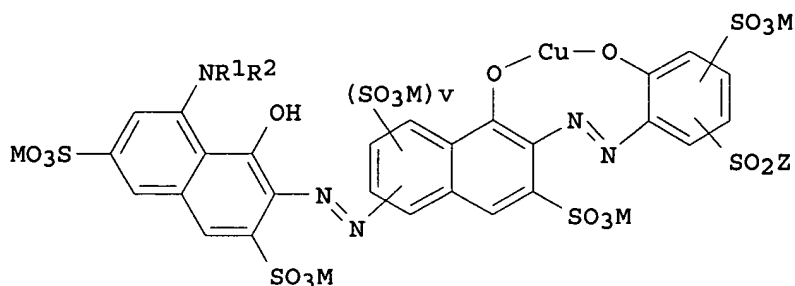
RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
=> => d que l10 stat
L6      133 SEA FILE=CAPLUS ABB=ON  PLU=ON  ("RUSS WERNER"/AU OR "RUSS
        WERNER H"/AU OR "RUSS WERNER HUBERT"/AU OR "RUSS WERNER HUBERT
        DR"/AU)
L7      31  SEA FILE=CAPLUS ABB=ON  PLU=ON  ("SCHWAIGER GUENTHER"/AU OR
        "SCHWAIGER GUNTHER"/AU)
L8      39  SEA FILE=CAPLUS ABB=ON  PLU=ON  "MEIER STEFAN"/AU
L9      187 SEA FILE=CAPLUS ABB=ON  PLU=ON  L6 OR L7 OR L8
L10     2   SEA FILE=CAPLUS ABB=ON  PLU=ON  L9 AND DISAZO AND COPPER
```

```
=> d 1-2 bib abs
```

L10 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2003:991588 CAPLUS  
 DN 140:43535  
 TI Water-soluble reactive disazo dyes, their production and their use  
 IN Schwaiger, Guenther; Russ, Werner; Meier, Stefan  
 PA Dystar Textilfarben G.m.b.H. & Co. Deutschland K.-G., Germany  
 SO PCT Int. Appl., 34 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003104335	A1	20031218	WO 2003-EP6027	20030610
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	DE 10225859	A1	20040108	DE 2002-10225859	20020611
	CA 2489248	AA	20031218	CA 2003-2489248	20030610
	AU 2003236722	A1	20031222	AU 2003-236722	20030610
	BR 2003011754	A	20050315	BR 2003-11754	20030610
	EP 1516019	A1	20050323	EP 2003-735585	20030610
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	CN 1659240	A	20050824	CN 2003-813580	20030610
	ZA 2004009480	A	20051118	ZA 2004-9480	20041124
	US 2005241079	A1	20051103	US 2004-517548	20041208
PRAI	DE 2002-10225859	A	20020611		
	WO 2003-EP6027	W	20030610		
OS	MARPAT 140:43535				
GI					



I

AB The invention relates to azo dye copper complexes (I; M = H, alkali metal, ammonium, alkaline earth metal/2; R1 = H, C1-4-alkyl; R2 = fiber-reactive group; Z = vinyl or potential vinyl; v = 0,1) and their manufacture and use for coloring or printing fibrous materials. I have show fast blue shades. In an example, 4-(2-sulfatoethylsulfonyl)-2-amino-6-phenolsulfonic acid→2-amino-5-hydroxy-7-naphthalenesulfonic acid was prepared, diazotized, and coupled with 1-acetamido-3,6-disulfo-8-naphthol. The resulting disazo dye was treated with

copper sulfate pentahydrate to give a deep blue dye ( $\lambda_{\max}$  587 nm) for cotton.

RE.CNT 15      THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

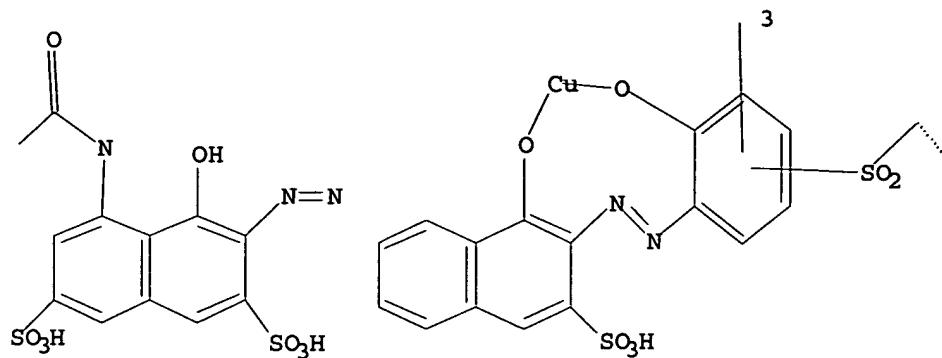
L10 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1998:219868 CAPLUS  
 DN 128:271649  
 TI Mixtures of blue-coloring fiber-reactive dyes and their use for coloring  
 hydroxy and/or carboxylic amide group-containing fiber materials  
 IN Russ, Werner Hubert; Von der Eltz, Andreas; Groebel,  
 Bengt-Thomas; Negri, Daniele  
 PA DyStar Textilfarben G.m.b.H. und Co. Deutschland K.-G., Germany  
 SO Ger. Offen., 20 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19640203	A1	19980402	DE 1996-19640203	19960930
	EP 832939	A2	19980401	EP 1997-116517	19970923
	EP 832939	A3	19980909		
	EP 832939	B1	20001227		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	AT 198344	E	20010115	AT 1997-116517	19970923
	US 6171348	B1	20010109	US 1997-936822	19970925
	JP 11043624	A2	19990216	JP 1997-264528	19970929
PRAI	DE 1996-19640203	A	19960930		
OS	MARPAT 128:271649				
GI					

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Dye mixts. with good ability to dye the title fibers deep blue shades in a trichromic dyeing process contain copper complexes I [M = H, Li, Na or K; A = Q1, Q2, or CONHR7; R0 = H or Cl; R = H, C1-4 alkyl, sulfo, carboxy, C2-5 alkanoyl, or SO2Y; R5 = H, (substituted) C1-4 alkyl, (substituted) Ph; R6 = H, C1-4 alkyl, (CH2)nSO2Y, (CH2)nC6H4SO2Y, or (CH2)pB(CH2)qSO2Y; B = O or NH; X = CO2, O, or SO3-; Y = vinyl,  $\beta$ -chloroethyl,  $\beta$ -thiosulfatoethyl, or  $\beta$ -sulfatoethyl; R7 = H, C1-4 alkyl, (CH2)nSO2Y, or (CH2)nC6H4SO2Y; n = 2 or 3; m = 0 or 1; p, q = 2-4], disazo compds. II (M, Y = same as in I; R1-4 = H, Me, Et, MeO, or EtO), and azo compds. III (M, Y, R3, R4 = same as in II).

=> => d que l12 stat  
L1 STR



Structure attributes must be viewed using STN Express query preparation.  
L12 1 SEA FILE=MARPAT SSS FUL L1

100.0% PROCESSED 215 ITERATIONS  
SEARCH TIME: 00.00.01

1 ANSWERS

=> d l12



L12 ANSWER 1 OF 1 MARPAT COPYRIGHT 2006 ACS on STN

AN 106:103809 MARPAT

TI Reactive disazo metal complex dyes

IN Jaeger, Horst

PA Bayer A.-G., Fed. Rep. Ger.

SO Ger. Offen., 31 pp.

CODEN: GWXXBX

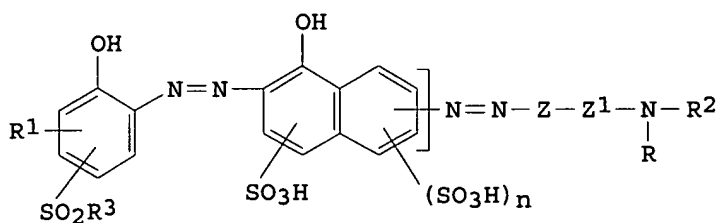
DT Patent

LA German

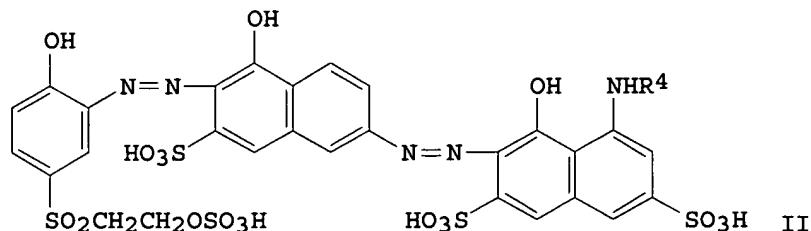
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3519551	A1	19861204	DE 1985-3519551	19850531
	EP 203505	A1	19861203	EP 1986-106872	19860521
	EP 203505	B1	19890524		
	R: CH, DE, FR, GB, LI				
	JP 61278568	A2	19861209	JP 1986-120339	19860527
	JP 07049536	B4	19950531		
PRAI	DE 1985-3519551		19850531		

GI



I



II

AB Cu, Co, and Cr complexes of reactive disazo dyes I ( $n = 0, 1$ ;  $R = H$ , (un)substituted C1-4 alkyl;  $R1 = H$ , substituent;  $R2 =$  pyrimidine reactive component containing  $\geq 1$  F leaving under dyeing conditions;  $R3 = HC:CH2$ ,  $CH2CH2R5$ ;  $R5 =$  leaving group;  $Z =$  hydroxynaphthalene, pyrazole, or pyridone bridging group;  $Z1 =$  direct bond or divalent bridging group) are useful for dyeing and printing of HO group- or amide group-containing materials. Reaction of a dye mixture II ( $R4 = 71.8 \text{ mol\%}$  2,5-dichloro-4-fluoropyrimidin-6-yl and  $28.2 \text{ mol\%}$  5,6-dichloro-2-fluoropyrimidin-4-yl groups) with  $CuSO4 \cdot 5H2O$  gave the 1:1 Cu complex, which dyed wool in a navy blue shade.

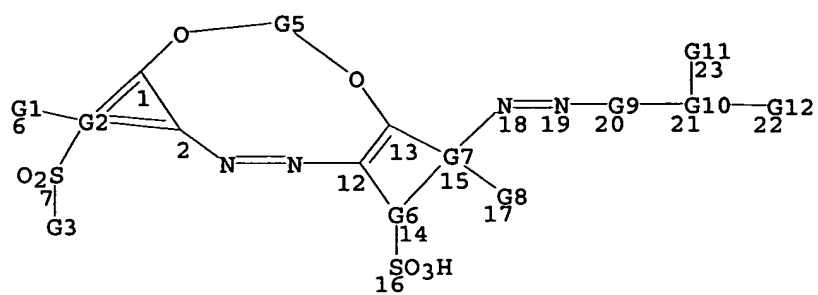
AI DE 1985-3519551 19850531

EP 1986-106872 19860521

JP 1986-120339 19860527

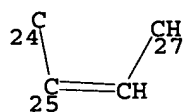
PRAI DE 1985-3519551 19850531

MSTR 1

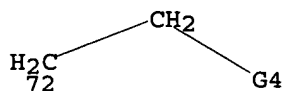


G1 = SO<sub>3</sub>H

G2 = 24-1 25-7 24-6 27-2

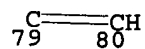


**G3 = 72**

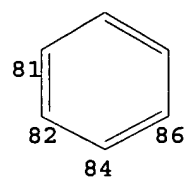


G5 = Cu

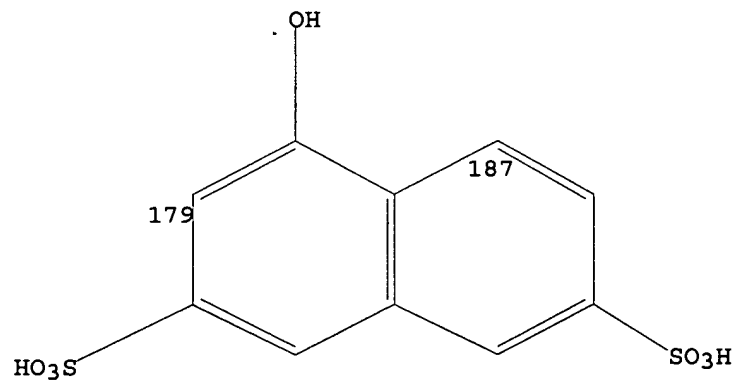
G6 = 79-12 80-15 79-16



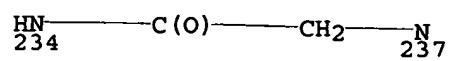
G7 = 81-13 82-14 84-17 86-18



G9 = 179-19 187-21



G10 = 237-22 234-20 237-23



Patent location:

claims

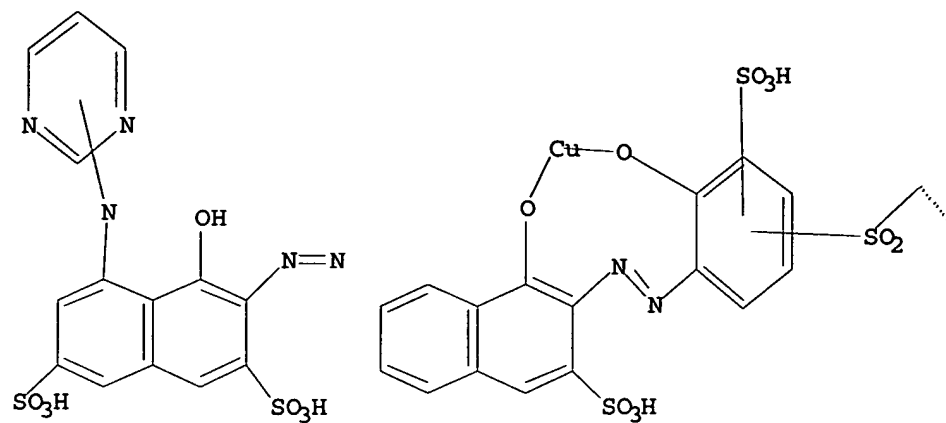
Note:

record may include structures from disclosure

=> d que 114

L2

STR



Structure attributes must be viewed using STN Express query preparation.

L14

1 SEA FILE=MARPAT SSS FUL L2

=> d 114

L14 ANSWER 1 OF 1 MARPAT COPYRIGHT 2006 ACS on STN

AN 106:103809 MARPAT

TI Reactive disazo metal complex dyes

IN Jaeger, Horst

PA Bayer A.-G., Fed. Rep. Ger.

SO Ger. Offen., 31 pp.

CODEN: GWXXBX

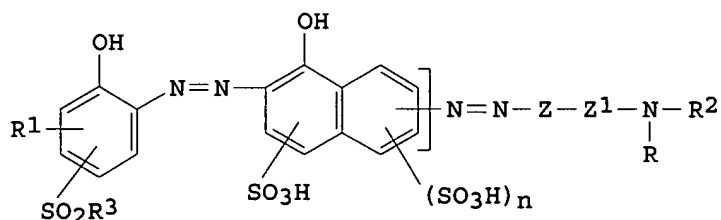
DT Patent

LA German

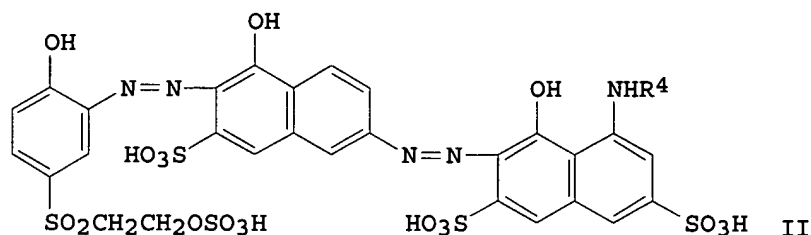
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3519551	A1	19861204	DE 1985-3519551	19850531
	EP 203505	A1	19861203	EP 1986-106872	19860521
	EP 203505	B1	19890524		
	R: CH, DE, FR, GB, LI				
	JP 61278568	A2	19861209	JP 1986-120339	19860527
	JP 07049536	B4	19950531		
PRAI	DE 1985-3519551		19850531		

GI



I

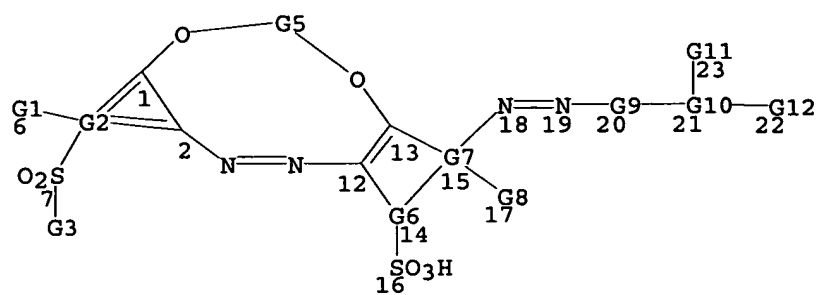


II

AB Cu, Co, and Cr complexes of reactive disazo dyes I ( $n = 0, 1$ ;  $R = H$ , (un)substituted C1-4 alkyl;  $R1 = H$ , substituent;  $R2 =$  pyrimidine reactive component containing  $\geq 1$  F leaving under dyeing conditions;  $R3 = HC:CH2$ ,  $CH2CH2R5$ ;  $R5 =$  leaving group;  $Z =$  hydroxynaphthalene, pyrazole, or pyridone bridging group;  $Z1 =$  direct bond or divalent bridging group) are useful for dyeing and printing of HO group- or amide group-containing materials. Reaction of a dye mixture II ( $R4 = 71.8 \text{ mol\%}$  2,5-dichloro-4-fluoropyrimidin-6-yl and  $28.2 \text{ mol\%}$  5,6-dichloro-2-fluoropyrimidin-4-yl groups) with  $CuSO4.5H2O$  gave the 1:1 Cu complex, which dyed wool in a navy blue shade.

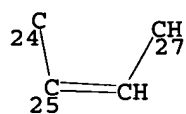
AI DE 1985-3519551 19850531  
 EP 1986-106872 19860521  
 JP 1986-120339 19860527  
 PRAI DE 1985-3519551 19850531

MSTR 1

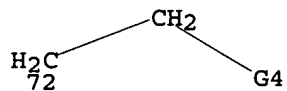


G1 = SO<sub>3</sub>H

G2 = 24-1 25-7 24-6 27-2

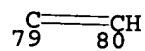


G3 = 72

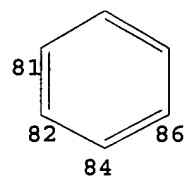


G5 = Cu

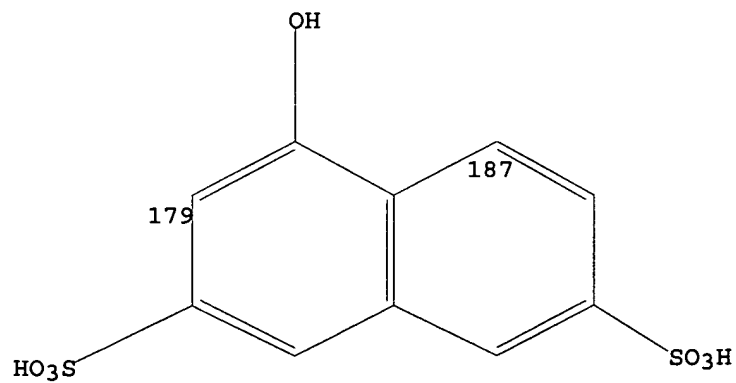
G6 = 79-12 80-15 79-16



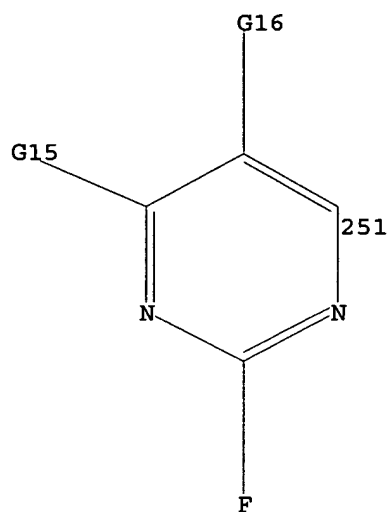
G7 = 81-13 82-14 84-17 86-18



G9 = 179-19 187-21



G10 = N  
G12 = 251



Patent location:  
Note:

claims  
record may include structures from disclosure

=> d his full

(FILE 'HOME' ENTERED AT 11:35:59 ON 14 JUL 2006)

FILE 'REGISTRY' ENTERED AT 11:36:09 ON 14 JUL 2006

L1           STRUCTURE UPLOADED  
            D  
L2           STRUCTURE UPLOADED  
            D  
L3           0 SEA SSS SAM L1 OR L2  
L4           3 SEA SSS FUL L1 OR L2

FILE 'CAPLUS' ENTERED AT 11:37:19 ON 14 JUL 2006

L5           1 SEA ABB=ON PLU=ON L4  
            D QUE L5 STAT  
            D BIB ABS HITSTR  
            E RUSS WERNER/AU  
L6           133 SEA ABB=ON PLU=ON ("RUSS WERNER"/AU OR "RUSS WERNER H"/AU OR  
            "RUSS WERNER HUBERT"/AU OR "RUSS WERNER HUBERT DR"/AU)  
            E SCHWAIGER GUNTHER/AU  
L7           31 SEA ABB=ON PLU=ON ("SCHWAIGER GUENTHER"/AU OR "SCHWAIGER  
            GUNTHER"/AU)  
            E MEIER STEFAN/AU  
L8           39 SEA ABB=ON PLU=ON "MEIER STEFAN"/AU  
L9           187 SEA ABB=ON PLU=ON L6 OR L7 OR L8  
L10          2 SEA ABB=ON PLU=ON L9 AND DISAZO AND COPPER  
            D QUE L10 STAT  
            D 1-2 BIB ABS

FILE 'MARPAT' ENTERED AT 11:41:54 ON 14 JUL 2006

L11          0 SEA SSS SAM L1  
L12          1 SEA SSS FUL L1  
L13          0 SEA SSS SAM L2  
L14          1 SEA SSS FUL L2  
            D QUE L12 STAT  
            D L12  
            D QUE L14  
            D L14

FILE HOME

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 13 JUL 2006 HIGHEST RN 892505-73-6

DICTIONARY FILE UPDATES: 13 JUL 2006 HIGHEST RN 892505-73-6

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and  
predicted properties as well as tags indicating availability of  
experimental property data in the original document. For information  
on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>



## FILE CAPLUS

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 14 Jul 2006 VOL 145 ISS 4  
FILE LAST UPDATED: 13 Jul 2006 (20060713/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

<http://www.cas.org/infopolicy.html>

## FILE MARPAT

FILE CONTENT: 1961-PRESENT VOL 145 ISS 2 (20060707/ED)

SOME MARPAT RECORDS ARE DERIVED FROM INPI DATA FOR 1961-1987

MOST RECENT CITATIONS FOR PATENTS FROM MAJOR ISSUING AGENCIES  
(COVERAGE TO THESE DATES IS NOT COMPLETE):

US	2006118302	08 JUN 2006
DE	102004052060	27 APR 2006
EP	1650181	26 APR 2006
JP	2006111933	27 APR 2006
WO	2006053912	26 MAY 2006
GB	2419093	19 APR 2006
FR	2877004	28 APR 2006
RU	2273632	10 APR 2006
CA	2518664	10 MAR 2006

Expanded G-group definition display now available.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

=>